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ABSTRACT

This teacher's guide is designed to help teachers make the families described in the "People on the Farm" series of booklets come alive for their students. The guide provides a variety of suggestions for class discussions and student activities. The teacher's guide is organized into three sections. Section 1 covers some of the major ideas, or generalizations, that flow through all of the booklets. Each of the generalizations is followed by a suggested classroom activity. Goals and teacher instructions for implementing the activity are provided. Section 2 summarizes each of the booklets and contains several student activities and discussion questions for each booklet. Section 3 contains a list of resources (local, state, and national) for obtaining further information about agriculture. (KC)

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United States Department of Agriculture

Office of Governmental and Public Affairs

A Teacher's Guide to

People on the Farm

U.S. DEPARTMENT OF EDUCATION
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Introduction

Meet Joe and Nona Schwartzbeck and their boys, Gus and Shane. They live on a dairy farm in Maryland, not far from Washington, D.C. Or meet John and Mary Miller and their children. They live in a century-old farmhouse near Waterloo, Iowa, and raise hogs and corn for a living. The Schwartzbecks and the Millers are among that special breed of entrepreneurs who together make agriculture the Nation's biggest, most productive industry. And that's where your food begins—on one of those farms run by one of those families.

This teacher's guide will show you how the Schwartzbecks and the Millers and the other families in the series of booklets called the "People on the Farm" live and produce the food we eat. The guide will help you make these families come alive in your classroom as you fit the "People on the Farm" books into the curriculum you are teaching. The guide provides a variety of suggestions for class discussions and student activities.

Some Facts about American Agriculture

American farm families provide food and fiber for 219 million people in the United States and many millions of people in other countries. These farm families make agriculture our Nation's largest single industry, employing over 20 million people. Farming alone employs almost 4 million working people, as many as the combined payrolls of transportation, the steel industry, and the automobile industry. Eight to 10 million more workers store, transport, process, and merchandise the output of America's farms. And another 3 million people provide the seeds, fertilizers, and other supplies farmers use. That adds up to more than one out of every five jobs in private enterprise.

Here are some more farm facts:

- More than one-half of the 2.3 billion-acre land area of the United States is used to produce food.
- American farmers today produce 64 percent more crops than their fathers did using the same amount of land. One farmworker, which includes the farmer and members of the family working on the farm, now supplies enough food and fiber for 65 people. Only 10 years ago one farmworker was providing enough for 42.
- On the average, each person in the United States consumes about a ton of food per year. That's roughly the same amount we consumed 10 years ago, and even 50 years ago. And, surprisingly, we are spending a smaller portion of our incomes on food than ever before.
- Agricultural exports have become a major factor supporting our balance of trade and the national economy, making it possible to buy our imported oil supplies. The production from 1 out of every 3 crop acres goes overseas, and we still have a surplus at home.
- Issues related to agriculture are constantly in the news—food prices, food safety, world food supplies, nutrition, the Third World, balance of trade, the strength of the dollar in international markets.

In short, American agriculture is a powerful force in shaping the way we live, and the way we will continue to live. You can understand it more easily through the daily activities of these farm families. Where this once was a struggling nation in which 95 percent of the population had to farm to survive, the productivity of the farm families has made it possible for this to become the wealthiest and most powerful nation on earth in which less than 3 percent of the population grow the food for the rest of us.

But the changes in American agriculture, which have produced more and more food from the land, have also created many contemporary problems requiring major public policy decisions. Farms are dwindling in numbers, increasing in size, and are becoming highly specialized.

What does this mean for the future of farming and our food supplies and our rural way of life? Are continually bigger and fewer farms the way we want to go?

There was a time when farmers were mainly self-sufficient. But increasingly they must rely on non-farm sources for the things they need to raise our food supplies each year. They must borrow money, lots of it at times to grow the crops and raise the livestock. They must purchase enormous amounts of increasingly expensive energy (modern agriculture depends on energy to run tractors, to manufacture fertilizer and pesticides, and to process crops and to ship them long distances to market). How can we help cope with these and other problems facing agriculture, and the whole country, today?

The "People on the Farm" series describes modern agriculture by telling about real farm families at home and at work. Agriculture today is a business, requiring capital investment, modern machinery, and the use of the latest scientific advancements to produce more food from the land to keep up with our growing population. But, though most farms to-

day are modern, they are different from most industries in that all but 2 percent of today's farms are family owned and operated.

How to Use the Books and this Teacher's Guide

The "People on the Farm" series was designed to help students understand the nature of modern agriculture, how their food is produced, and the concept of interdependence between farmers and consumers. This Teacher's Guide can help you use the books in your classroom. Developed by the U.S. Department of Agriculture for classrom and community education use, the "People on the Farm" series will fit into courses in American history, Government, problems of democracy, economics, consumer education, business education, home economics, and career education at the high school level.

Each book in the "People on the Farm" series—*Dairying, Broiler Growers, Corn and Hog Farming, Raising Beef Cattle, Growing Oranges,* and *Black Families*—shows how farm families work together and make the decisions necessary in farming. The books can help students understand modern agriculture, as well as provide an opportunity to see in operation a number of broad concepts such as the workings of supply and demand, the role of government in the economy, and the impact of technological change.

You can use the books in the "People on the Farm" series in the classroom in a number of ways, depending upon the curriculum you are teaching and the needs of your students.

- The books can be used together to create a unit or even a short course on agriculture today.
- One book can be read and discussed by the class as a case study in modern agriculture.
- The class may read several of the books and make comparisons among them.
- Or the books may be used to give examples from agriculture when classroom study is focusing on a broad concept such as supply and demand, decisionmaking in business, and career possibilities.

In order to help you use the books in ways best suited to your own needs we have designed this Teacher's Guide in the following manner:

Section 1 (p. 4) covers some of the major ideas, or generalizations, that flow through all of the books. Each of the generalizations is followed by a suggested classroom activity.

Section 2 (p.10) summarizes the books followed by several student activities and discussion questions for each book.

Section 3 (p.32) is a list of resources for further information about agriculture.

Audiovisual Materials

To help make the families and their activities even more real for your class the Department has developed sound filmstrips to accompany several of the books in the "People on the Farm" series. Each filmstrip is 100 to 150 frames and runs for 15 to 20 minutes. Filmstrips are accompanied by a cassette with both audible beep and inaudible pulse.

People on the Farm: Dairying
People on the Farm: Broiler Growers
People on the Farm: Corn and Hog Farming
People on the Farm: Growing Oranges

The filmstrips are available for $20.50 each from: Photo Lab, Inc., 3825 Georgia Ave., N.W., Washington, D.C. 20011.

Slide set versions are available for $29.50 each from: Photography Division, GPA, USDA, Washington, D.C. 20250.

Section 1 Generalizations and Related Activities

Although each book in the "People on the Farm" series deals with a specific type of farming, there are major generalizations that are common to all of the books. These generalizations deal with: 1. Farming as a business; 2. The impact of technology on farming; 3. The increasing specialization in farming; 4. The role of government in agriculture; 5. The diversity in farming; 6. The interdependence between agriculture and the rest of the economy; and 7. The way of life of farmers and their families.

The generalizations are designed to help you focus your students' attention on key points. Each generalization is followed by an activity, frequently involving making comparisons among books. You may wish to use a discussion of the generalizations, followed by some of the activities, as an introduction to the unit. It is also possible to use the generalizations and activities to review and summarize the program.

1. Farming As A Business.

Generalization

In order to make a profit farmers must invest large amounts of money, make a continuous series of business decisions, and take financial risks.

Activity

Understanding an income statement.

Goals

Understand profit, read an income statement, and prepare an income statement for a hypothetical farm family business.

Teacher Instructions

1. Review with the students one of the income statements in the "People on the Farm" series. Be sure to explain the following concepts to the students:
a. The purpose of an income statement is to determine profit or loss. Annual profit is what's left over after all costs are paid. Profit is the net return for risk taking and for management, not for labor.
b. "Annual gross cash farm income" comes from the sales of products raised or grown.
c. "Cash costs" are those expenses that farmers must pay in order to earn income. Most costs will be obvious, like buying seed and feed, interest on loans, property taxes, and fuel. However, some costs will need additional explanation.
d. "Depreciation" is the wear and tear on buildings and equipment. If depreciation is not taken, farmers overstate their incomes. They must keep money in reserve to replace their buildings and equipment eventually.

Finally, some costs are "fixed" while others are "variable." Fixed costs involve one-time purchases such as land, buildings, and machinery as well as interest on real-estate loans. These costs don't change no matter how much or how little a farmer produces. Variable costs, on the other hand, involve continuing purchases. They change as production inputs increase or decrease and as prices fluctuate. Examples of variable costs are feed, seed, labor, fuel, and interest on production loans.

Students should understand that farmers can stay in business for a short period of time without making a profit as long as they cover costs. In the long run, however, farmers must make a profit to stay in business.

2. Students should complete the following questions to determine whether they understand the profit and loss concepts.

Sims Brothers Partnership Income and Expenses, 1978

Income		Expenses	
Sale of cotton	$70,685	Hired labor (not full time)	$ 5,875
Sale of grain	63,749	Repairs, maintenance	13,871
Patronage dividends (from cooperative)	2,046	Interest	1,258
Ag program payments		Feed purchased	988
Henry	230	Seeds, plants purchased	7,406
John	927	Fertilizers, lime, chemicals	25,887
Farmers Butane gas tax refund	365	Machine hire (airplanes)	3,715
Total	$138,002	Supplies purchased	148
		Vet fees	350
Income	$138,002	Gasoline, fuel, oil	9,779
Expenses and Depreciation	89,524	Taxes, Social Security	1,092
Net profit	$ 48,478	Insurance	2,063
(divided between 2 families)		Utilities	516
		Subscriptions and dues	79
		Accounting	390
		Cotton scouts	406
		License	187
		Office supply	28
		Total expenses	$74,038
		Depreciation	$15,486
			$89,524

Did we make a profit?
Sims Brothers Partnership Income and Expenses, 1978 *(See Black Families)*

I. Answer the following questions based on the Sims' income statement.

1. From what crop did the Sims receive most of their income?
2. What would happen to Sims' income if people gave up cotton clothes for polyester?
3. What is Sims' largest cost?
4. Which costs are fixed and which are variable?
5. If the costs of land, machinery, and buildings increase, will farms become bigger or smaller? Why?
6. What is depreciation? What would happen to the Sims' profits if depreciation were not included as a cost? Would those profits fairly reflect what the Sims really made?
7. How much profit did the Sims make on their farm in 1978?
8. Could the Sims stay in business if they suffered a $10,000 loss? Why or why not?

II. Now make your own Income statement based on the following information. Pat and Howie Spicer grow oranges. Their fruit sales were $140,000 for the year. They paid $30,000 for salaries, $10,000 interest on notes, $5,000 for repairs and maintenance, $6,000 for equipment, $15,000 for fertilizer and spray, $20,000 for drainage, $5,000 for fuel, $6,000 for insurance, and $10,000 for other things. Depreciation on their groves and equipment was $8,000.

Put the information on an income statement and determine the Spicers' profit or loss.

2. The Impact Of Technology On Farming.

Generalization

Almost nothing is done the way it was 50, or even 25, years ago. In general, farms have become larger and more specialized. Machines and the use of scientific technology have replaced hand labor. Agriculture has become far more productive, with more food and fiber produced per acre and per farmworker.

Activity

Understanding the impact of technological change on agriculture.

Goals

Students should be able to identify and discuss the impact of some of the major technological innovations that have changed and continue to change American agriculture.

Teacher Instructions

1. Divide the students into groups and assign a book to each group *(Beef, Dairying, Corn/Hog, Broiler* and *Oranges).* This activity may also be done using only one or two of the books. Ask each group to read its assigned book and as a group fill in a chart like the one below.
List the technological changes affecting the productions and the food in your book. (Divide the chart into three columns or categories, as follows):

Machinery that a farmer did not have 25 years ago	Scientific advancements made by agricultural and other scientists	Changes in farming as a result of technology

2. Combine the results of all the groups' findings for each category (new machinery, scientific advancements, changes) on the board. Then for each category ask the students to make some generalizations about technological changes. For example, for the first category students might make a statement like "machinery generally replaces hand labor," or "the need for more machinery has increased the cost of getting started in farming." Discuss these generalizations to see if they are true across all of the books. What seem to be the trends in technological change? How do you think each of the commodities will be grown or raised 25 years from now? Have the students do some research on this. Source of information would be the library, county or State agricultural agents, farm groups or commodity associations. (p.32 of this Teacher's Guide provides some specific sources.)

3. (Spinoff activity) What would happen if things were like the old days? Ask students to think about and discuss what would happen to farmers and consumers if the policy of this mythical politician were adopted: "The small dairy farmer is becoming extinct," said the political candidate. "If I get elected, I will

save the small dairy farmer by banning machines. Modern milking machines and automated feeding machines cost money. Today, a farmer may have to invest $150,000 just to get started. We need to go back to the old-fashioned farm. Hand milking will increase employment as well as emphasize the old values of hard work and sacrifice."

3. The Increased Specialization In Farming.

Generalization

Most farmers today specialize in one or two products best suited to the climate and geographical conditions in their area, and to the supplies of labor and other resources.

Activity

Understanding regional crop specialization.

Goals

Students should understand why oranges are grown in Florida and corn in Iowa and not the other way around.

Teacher Instructions

Organize the class into small groups. Each group will be responsible for one of the following books: *Beef, Corn/Hog, Dairying, Broilers* and *Oranges.* Ask each group to read the assigned book and if necessary do some library research, and fill in the chart below. (Note that not all factors apply to each commodity: for example, soil type is not relevant to raising broilers.)

Region or State producing the commodity	Best topography and soil type	Importance of being close to markets
Desirable temperature range	Needed labor supplies; skilled labor/unskilled labor	Water requirements

List each group's findings on the chalkboard. Use a map of the United States to show where each commodity is produced. Ask each group to summarize for the class the importance of each of the factors (temperature, water, soil, etc.) in the production of that particular commodity. Some things are grown over a wider area than others. Why is this so? Could any of the products be raised in any other specialized region? How do you think a farmer actually decides what to raise? (Try to contact some farmers and see what they say.) What is the role of a good transportation system in the regional specialization of agriculture?

4. The Role Of Government In Agriculture.

Generalization

Farmers and those who prepare and bring our food to market must meet product standards established both by Government regulation and by the tastes and preferences of the consumer.

Activity

Examining Government regulations and consumer preferences.

Goals

Students will be able to identify and describe examples of Government regulations for consumer protection in agriculture, and will be able to identify and de-

scribe examples of the influence of consumer tastes on agricultural production.

Teacher Instructions

Divide the class into small groups around each booklet being studied—*Corn/Hog, Dairy, Beef, Oranges,* and *Broilers.* Ask one-half of the pupils in each small group to read their booklets and list all of the ways Government is involved in the production, processing, and marketing of their product. Why is the Government performing each service? Which actions show concern for consumer protection? Do any of these services affect the cost of production or marketing?

Ask the second half of each small group to read the booklets and make a list of things consumers look for when shopping for each product. How do farmers try to appeal to consumer tastes? Why are consumer tastes important to agricultural producers?

When each group has finished, make a complete list of the consumers services performed by Government on the chalkboard. What does the list show about reasons why Government regulates agricultural production?

5. Not All Farmers Farm Alike.

Generalization

Although the use of modern technology and business methods characterizes all successful farming, there are great differences in the way farms are owned and run and in the way products are marketed.

Activity

Understanding different marketing options.

Goals

Students will understand that farmers must make decisions about how to raise their products as well as how to sell their products.

Teacher Instructions

Have the students read page 21 of *Oranges* to find out how the three types of markets are organized. Through discussion, fill in the information called for on this chart. (Put chart on the chalkboard.)

	Cooperative	Equity Corporation	Cash Market
Who owns the land and trees? How does it work?			

Discussion: What are the advantages and disadvantages of each type of marketing to the orange grower? Which would you choose if you were an orange grower? Why?

6. The Interdependence Between Agriculture And The Rest Of The Economy.

Generalization

Agriculture and the rest of the economy are interdependent. Farmers buy machines, seed, fuel, electric power, insurance, and many more things; and all the industries that transport, process, or market agricultural products depend on the farmer.

Activity

Considering interdependence.

Goals

Students will be able to describe jobs in agriculture and jobs made possible by it. They will be able to see the relation of agriculture to the rest of the economy.

Teacher Instructions

Ask for an example of an agricultural job familiar to students in the class. Put the job in the center of the chalkboard. Ask pupils to think of types of work or jobs which must be performed *before* the job on the board can come into existence. What types of work or jobs are available *because* of what the workers in the job on the board do?

Ask the students to read any of the books and have them list occupations they run across. When they have finished, have each pupil select one job and place it in the middle of a sheet of paper. On the top of the sheet, list jobs which are important to the existence of the occupation in the middle. On the bottom of the sheet, list occupations influenced by the job in the middle. How are agricultural occupations related to the larger American economy?

7. The Way Of Life Of Farmers And Their Families.

Generalization

Farming influences the lifestyle of a farmer and the whole family. Farming is frequently a family business with participation of all members, including the children.

Activity

Examining the lifestyle of farmers.

Goals

Students will have a clearer understanding of lifestyles on the farm and will be able to compare them with the lifestyles created by other career choices.

Teacher Instructions

Ask the pupils to describe a typical day of a farm family. Use the families in the books or, if possible, interview a farmer, the farmer's spouse or their children. List the activity and length of time spent in each activity on the chalkboard. Discuss how the routine changes at different times of the year.

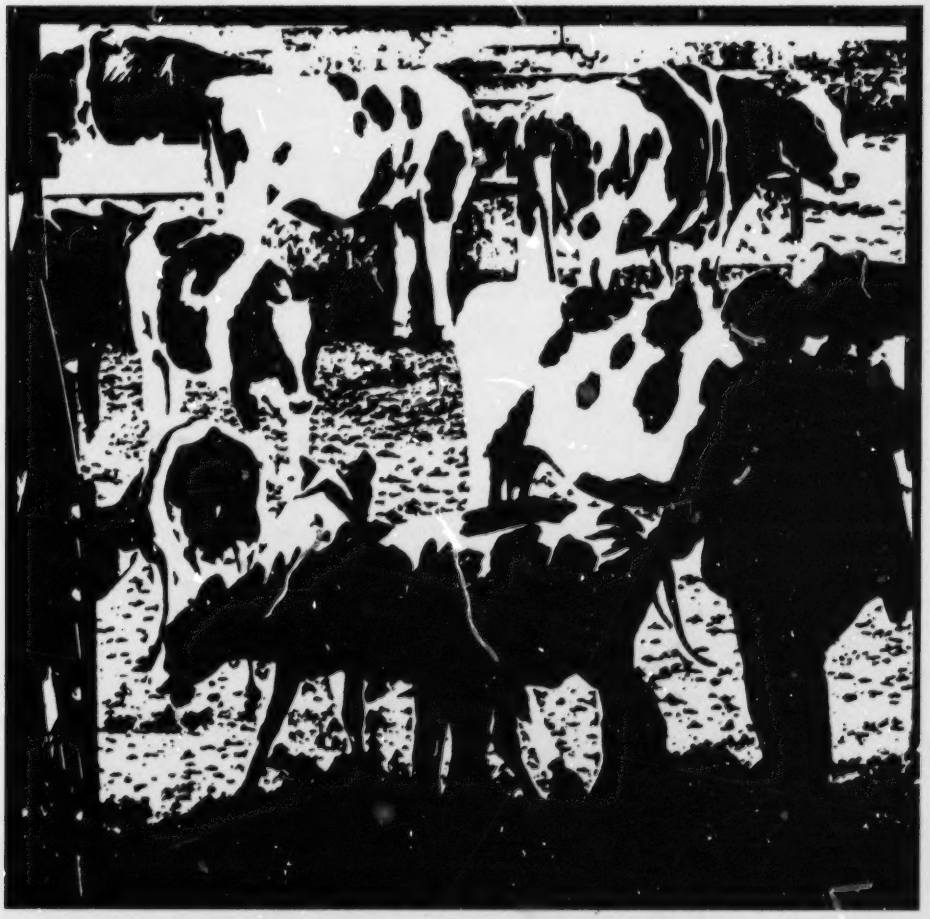
Now ask the class to consider how the routine and demand of the career influence the lifestyle of someone in that career. Begin by describing the career's influence on *leisure time* activities. Progress through *friendship patterns, family life, income, status, experiences, opportunities, self-image,* and *values.*

Compare and contrast the impact of farming on the way of life with the effect of being a nightshift worker in a factory, an office clerk, a traveling salesperson, a teacher, or being in some other business.

Do you think you would like the way of life on a farm? Why or why not?

Section 2 The Books/Summaries and Activities

Dairying



The Schwartzbecks and the Bealls of Maryland own two of the approximately 300,000 dairy farms in the United States. There are now only about half as many dairy farms as there were 25 years ago, but farm herds are larger. Because of modern milking machines that enable one person to milk about 96 cows in 2 hours, many farmers can handle the increased number of cows with no increase in the number of workers. As Rudell Beall says, "Now we have 10 times the number of cows we had in the thirties and basically three men handle them—just as Dad and I and a hired man did with 20 cows back then."

There's been another change in dairying too. Because of better breeding, better feeding, and better management, the average dairy cow produces twice as much milk as the average cow did 25 years ago.

Dairy farms are located all across the country, and many of them are close to metropolitan areas, which are major markets for fresh milk.

Both the Bealls and the Schwartzbecks were raised on farms. The Bealls enlarged their father's farm with help from his two sons, while the Schwartzbecks bought their farm in 1968 after 6 years' experience in farming on someone else's land. The Schwartzbecks' farm cost $125,000, much of which was borrowed from

farmer-owned financial institutions which specialize in loans to farmers. The Schwartzbecks figure they have invested $300,000 in the farm, including the purchase price. The value of the farm has increased greatly. They could probably get nearly a half million dollars for the farm today. But they have no plan to sell. They like their life on the farm and want to pass the farm on to their children.

The value of farmland is constantly increasing—good news for the farmer who already has it and plans to sell it, or for those who will inherit a farm, but a big problem for anyone trying to enter farming today. Another big expense for farmers, both those already in farming and those who want to enter, is the high and increasing cost of machinery, buildings, and supplies. Being in debt is part of a farmer's way of life.

Besides taking care of the dairy herds, dairy farmers raise most of the feed for their cows. The main crops include corn, alfalfa, and clover. The Government has an important role in the dairy industry. The Federal Government supports research to improve herds. It pays for education and information programs for farmers. It sets minimum prices paid to farmers for their milk in certain market areas and often buys up milk products to support farm milk prices. Local governments inspect milk and the dairy farms to ensure that milk meets specified health standards.

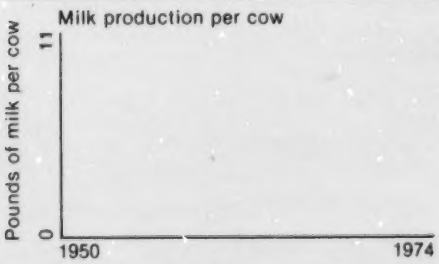
Activity Title (1) **Impact of Technology on Milk Production**

Major Concepts Technology; Reallocation of labor; Graph Interpretation.

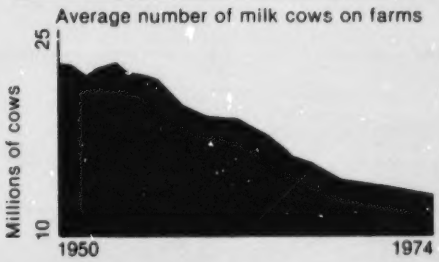
Goals To show how the application of science and technology to the raising of dairy cattle has improved milk output per cow.

Activity Description Using the numbers on page 4 of *Dairying*, ask the students to plot a graph that shows the average milk production per cow from 1950 to 1974 (graph A). Compare this graph with graph B (a reproduction of the graph shown on p. 4). Discuss with students the fact that the number of dairy cows has decreased while pounds of milk per cow have increased. Therefore, by 1974 it took only one-half as many cows to produce the same amount of milk that was produced in 1950.

graph A



graph B



Some discussion questions:

1. Why is it to the advantage of the dairy farmer to have one cow that produces 10,000 lbs. of milk instead of two cows that produce 5,000 lbs. each?

2. What specific advances in science and technology made higher producing cows possible? List the occupations necessary to provide these advances to the dairy industry.

3. What conclusions can you make about the effects of new technology on job opportunities?

Activity Title (2) **Women on the Farm**

Major Concepts Role of Women; Entrepreneurship Among Women.

Goals To help students understand the changing role of women on the farm, and to make some comparisons with activities of women in their own lives.

Activity Description Women play an important role in American agriculture today. They own farmland both in partnership with their husbands and families and as individuals. They also provide a great deal of the labor and skill involved in running farms today.

1. Make a diary of a day in the life of your mother. Which of her activities are related to earning an income? Which are related to managing the household? Which are related to community or civic activities? Make a list of Nona Schwartzbeck's activities. How does your mother's day differ from Nona Schwartzbeck's?

2. Look through the other books in the "People on the Farm" series and note the activities and roles of women in each book. What kinds of things do women do on the farm? Try to interview some farmwomen and find out about their role on the farm.

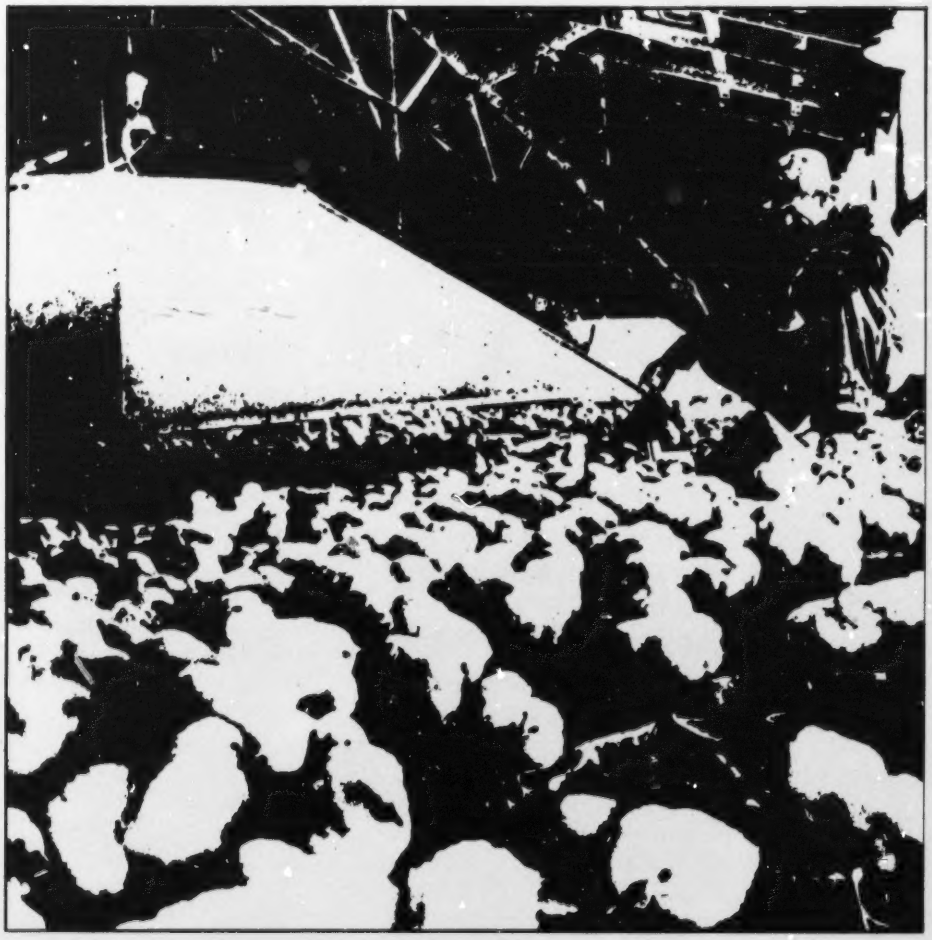
Activity Title (3) **A Debate about Price Supports**

Major Concepts Competition; Supply and Demand; Government and Regulation.

Goals To provide an opportunity for students to research, and then debate, the issue of the role of Government in supporting farm prices.

Activity Description Select two students to debate the proposition: "The United States Government should cease giving special assistance to dairy farmers in the form of support prices and import quotas for dried milk, butter, and cheese." Both sides of the debate should research specific details of these support programs by contacting the U.S. Department of Agriculture and other sources, and should consider the effect of these programs upon the farmer and the consumer.

Broiler Growers



The Laytons of Mississippi are among about 30,000 broiler growers in the United States. They raise broilers (young chickens for eating) from the time the chicks are 1 day old until the birds are ready for slaughter at about 8 weeks. Like 99 percent of the broiler growers in the United States, the Laytons do not own the chickens they raise. The Laytons raise the broilers on contract for a firm that owns the chicks, provides the feed, and slaughters and sells the broilers. The Laytons own the farm and the broiler houses where they raise 150,000 broilers per year.

The broiler industry has changed in the last few decades. The old-fashioned system in which chickens were bred, hatched, fed, and slaughtered on the farm and then sent to market has practically disappeared. Broiler growing is now a vertically integrated industry. That means that large firms or cooperatives control nearly all aspects of broiler production. Scientists breed the best possible chickens. The eggs are hatched at scientifically controlled hatcheries. Then independent farmers like the Laytons raise the chickens on contract with a company or cooperative, usually with company feed and according to company

directions. The company then takes the broilers to its processing plant where they are slaughtered and then sold. Broiler growers like the Laytons are paid an agreed-upon price per pound for the birds. They often get a bonus if they produce heavier-than-average broilers from a fixed amount of feed. The broiler industry as a whole turns out nearly 3 billion broilers to feed America's increasing appetite for chicken. American chicken consumption has leaped from half a pound per person in 1934 to more than 36.9 pounds today. This increase in consumption is due to scientific advancements in breeding, feeding, disease control, and methods of raising the birds.

Activity Title (1) **Changes in the Broiler Industry**

Major Concepts Investment; Impact of Technology.

Goals Students will be able to identify several ways in which investment in research and good facilities has improved broilers and lowered their relative cost to the consumer.

Activity Description

Chicken was once a special treat that the average family could afford only infrequently. Today the price of chicken is much lower in relation to other meat and to family income and is often served two or three times a week.

The chicken of today is a meatier bird, matures to market size more quickly, and is sold to the consumer in better condition than once was the case. This is possible because the people who raise and market broilers have invested in better equipment and machinery and in research on how to improve the product.

Using the booklet, *Broiler Growers* as a reference, list several ways in which science has improved the broilers that are marketed today.

Answers:

1. Discovery of vitamin D made it possible to raise chickens indoors. (p. 1)
2. A scientifically determined feeding formula produces birds that grow larger and are ready for market more quickly. (p. 1)
3. Scientific breeding has separated the strains that grow larger, and are therefore the best meat producers, from those that are the best egg layers. (p. 1)

Name several kinds of machinery or equipment that have improved the raising and marketing of chickens.

Answers:

1. Automatic feeding troughs reduce the labor used (p. 4).
2. Gas-fired brooders keep young chicks warm and increase their rate of growth (pp. 4–5).
3. Lights in broiler houses help prevent chickens from piling up on one another and smothering (p. 6).
4. Machine-killing and defeathering reduces the time between killing and refrigerating the birds (p. 7).

Activity Title (2) **Grading and Inspection**

Major Concepts Roles of Government; Consumer Protection and Information.

Goals

To help students better understand Government grading and inspection.

Activity Description

Before the students do any reading, have them try the following test to check their knowledge concerning Goverment grading and inspection. After the test have students use the booklet (pp. 2-3) to change the 15 statements so that they are all true.

True or False?

1. All broilers or frying chickens must be graded according to quality.
2. Grading of chickens is done by the Food and Drug Administration.
3. The highest quality chicken will bear the USDA C grade.
4. The U.S. Government pays the U.S. Government graders.
5. Every poultry processing plant in the United States that ships its products out of State has at least one U.S. Department of Agriculture inspector.
6. If a poultry plant ships only within a State, no inspection takes place.
7. Once the chicken leaves the plant, it is never inspected again.
8. If a chicken does not have a grade on it, you can be certain that it is of a lower grade.
9. Besides grades there are various classes by which chickens may be sold.
10. A processing plant for poultry is usually inspected about once a month by a Government inspector who does not announce his visit.
11. Grading and inspection are the same so that a label that states a chicken has been inspected means it is Grade A.
12. The lower grade chicken could be used in hot dogs and bologna.
13. Grade C indicates that the birds are fully fleshed and meaty, well finished, and attractive in appearance.
14. Grade A means the chicken is approved for human consumption but is diverted at the processing plant for further processing.
15. Grade B is never used because it would identify the product as being second quality.

Note to teacher: Inspection and grading are entirely different. Inspection is to ensure that the broilers are healthy and wholesome. All poultry must be inspected. Grading is voluntary and the grades refer to the appearance and meatiness of the chicken. The same is true of all foods—inspection is for health, and grading is for quality. Also, the grade has nothing to do with food value. Food whether Choice or Good beef, grade A or B eggs, Fancy or No. 1 apples, have about the same nutritional value. The higher grades have a better appearance and more uniform size, and in the case of meat, may be juicier, more flavorful, and usually—but not always—more tender.

Here are some of the grades for various kinds of foods.

Beef, Veal, Lamb	U.S. Prime, Choice, Good, Standard
Poultry	U.S. Grades A and B
Eggs	U.S. Grades AA, A, and B (Also classified for size: Extra Large, Large, Medium, Small)
Butter	U.S. Grades AA, A, and B
Cheddar Cheese	U.S. Grades AA and A
Canned, frozen, dried fruits, vegetables	U.S. Grade A or U.S. Fancy; U.S. Grade B; U.S. Choice or U.S. Extra Standard; U.S. Grade C or U.S. Standard

Activity Title (3) **Where are Broilers Raised?**

Major Concepts Regional Specialization; Business Climate; Factors of Production.

Goals To show what parts of the country produce broilers and why the business climate is suited for this type of production.

Activity Description

1. Put the figures given on page 23 concerning broiler production on the board or overhead and have the students locate and shade in the 10 States on a map. Use one color for the five leading States and another color for the next five.
2. Where does it appear that most of the broiler production takes place?
3. Check the reasons which you think might account for the large amount of broiler production in the five leading States.

- ☐ High wages
- ☐ Warm weather
- ☐ Ample labor supply
- ☐ Fewer alternative jobs
- ☐ Agricultural state
- ☐ Industrial state
- ☐ Chance to own your own land
- ☐ Low taxes
- ☐ Low wages
- ☐ Highly unionized
- ☐ Fewer agriculture alternatives
- ☐ High taxes
- ☐ Year-round work
- ☐ Part-time work
- ☐ Close to processor
- ☐ Likes farmwork
- ☐ Goes well with other types of farming
- ☐ High fuel cost
- ☐ Low fuel cost
- ☐ Short working hours

4. Discussion: When people go into farming or other businesses what do they hope to gain?
5. Discussion: In order to gain this (question 4) they look for a favorable business climate. Describe what you think is meant by a favorable business climate in connection with broiler production. (Look at the items checked in number 3.)

Activity Title (4) **Economics of the Broiler Industry**

Major Concepts Competition and Market Structure; Division of Labor and Specialization; Productivity.

Goals To illustrate how specialization and division of labor have increased efficiency in the broiler industry.

Activity Description

After reading the booklet, students should answer these questions in written form or in a class discussion:
1. How is broiler growing today different from 30 years ago? What are some effects of these changes on producers and consumers?
2. Look at the chart on page 6. What happened between 1935 and 1975 to broiler production? To producer prices per pound? To consumer prices per pound? How do these price increases compare with the rate of inflation?
3. What factors are responsible for the low prices of broilers? Why don't the producers benefit more from this?
4. Why do the Laytons raise broilers on contract rather than raise them and then sell them to the highest bidder?
5. Resources consist of land, labor, and capital. What resources do the Laytons provide? Which do they get from others? Provide specific examples to back up your answers.

Corn and Hog Farming

Growing hogs and the corn to feed them is the major activity of the Miller farm near Cedar Falls, Iowa. Nearly 700 pigs a year are born and fed to market size on the Miller farm. About 48,000 bushels of corn are grown there, too—10,000 bushels to feed the hogs, and the rest, to sell.

The Millers have two breeding herds of about 25 sows each, and each group farrows (has a litter of baby pigs, an average of 8 but as many as 16 pigs per litter) twice a year. That gives the Millers a steady supply of hogs to sell year round. Farrowing time involves much work. The baby pigs need constant attention. The danger of losing newborn pigs to disease and other difficulties is high. On a national average, 25 to 30 percent never reach the weaning age. The highest percentage of deaths take place within 3 or 4 days of birth. Newborn pigs are given antibiotics and vitamin injections to help them survive and grow.

It takes about 6 months for hogs to reach the desirable market size of about 220 pounds. Today, consumers want lean, heavily-muscled hogs. Scientific breeding has been changing hogs in that direction. The size of the loin eye (the meaty part of the pork chop) is an indication of this change. As John Miller says,

"Over the years hogs have changed a lot. I started with hogs with 3.5 square inches of loin eye. Now the loin eyes are 5–6 square inches." There is also much less fat.

Though the Millers breed and raise pigs from birth on their farm, more and more farmers are avoiding the trouble of breeding and farrowing by buying young pigs when they have just been weaned (at about 40 pounds) and raising them to market size. And that means there are a lot of other farmers who are in business just producing those feeder pigs. It's a good example of specialization on the modern farm.

But no matter whether farmers buy feeder pigs or produce their own, the favorite feed for those pigs is corn. Corn and hogs are grown everywhere in the United States, but more corn and more hogs are grown in the Midwest than anywhere else. The Corn Belt really deserves its name. U.S. farmers produce 47 percent of the world's corn, most of it in the Midwest. Two States in the Corn Belt, Iowa and Illinois, produce 40 percent of the corn grown in the United States. These two States alone produce as much as all the corn production of Eastern and Western Europe combined. This high production is possible because the temperature, soil, topography, and rainfall are just right for growing corn. The area is also ideal for growing soybeans, wheat, and potatoes. But the major crops are corn and soybeans rather than other commodities because farmers can make more money per acre with corn and soybeans.

Corn production uses the latest technology. Yields per acre in the United States have quadrupled since the 1930's. That's because high-yielding hybrid corn varieties were developed by agricultural researchers, the use of fertilizer has increased, and improved methods of working the soil have been developed. John Miller puts all this to work for him on his farm.

He tests the soil, plants several varieties of corn, uses hundreds of thousands of dollars worth of modern equipment, and practices conservation with contour plowing and minimum tillage. All of this requires many difficult decisions and a great deal of knowledge on his part. There are, for example, hundreds of combinations of chemicals available to kill weeds and insects. "Matching herbicides and insecticides to your own particular problems is vital," says Miller.

Even with all this, corn production and the farmer are still at the mercy of the weather. A hail storm can wipe out a newly planted crop. Extreme heat in the summer can cut output in the whole Corn Belt extensively. Even 1 week of extreme heat and hot, dry winds during the vital growing period when the plant is shedding pollen can cut a farmer's yield significantly.

Activity Title (1) **Decisions and Events**

Major Concepts Decisionmaking; Entrepreneurship; Economic Interdependence.

Goals To help students recognize the kinds of decisions farmers make and to help students understand the effect of outside events on farmer decisionmaking.

Activity Description Ask the class to read the *Corn and Hog Farming* book and keep a list of decisions made by the Miller family. (Some examples are—decisions whether to raise corn or hogs, when to buy feed, when to market the hogs, and whether to build a new building.)

Ask the pupils to discuss those decisions which they think are most crucial to the success of the farm and the family. Put these on the chalkboard. Identify the

choices available for each of those six to eight decisions. Tell the pupils to suppose they are the Miller family facing these decisions. On a piece of paper, have each student select an option as a choice for each decision.

When all the decisions are made, read each of the "events cards" below. Ask the students to decide how each event might relate to one or more of the decisions they have made. What new problems might the Miller family face? How does the event influence future decisionmaking? What helps an entrepreneur be successful?

Events Cards

1. The price of building materials has just dropped significantly due to the glut of materials on the market and little demand.
2. Interest rates have jumped dramatically. Little money for loans is available and only at very high rates.
3. Hog prices have taken a sharp turn upward and promise to continue the climb for the next 10–11 months.
4. New tax laws reward those farmers who own their property and equipment with large rebates to encourage more spending.
5. Soybean and soybean meal prices have jumped to a new high.
6. It does not rain for a week even though the weather bureau forecast rain for every day of the week.

Activity Title (2) **Hogs to Market**

Major Concepts Production and Price; Comparative Shopping.

Goals To help students understand the steps necessary to get the product from farm to market, and the cost to consumers of those steps.

Activity Description

1. Using page 11 of the book, ask students to develop a pie chart showing how much each business (farmer, wholesaler, processer, retailer) in the pork production and marketing processes receives out of each dollar spent on pork in the supermarket.
2. Ask students to research and describe the resources, labor, tools, machinery that are involved in each step of the pork production and marketing processes. What happens to the hog at each stage (farmer, wholesaler, processer, retailer) that changes the hog into the pork you buy in the supermarket?
3. Go to supermarkets and interview several meat department managers to find out what are the (3 or 4) most popular cuts of pork in your area. Gather per-pound prices for each cut and keep track of the prices for a 2- or 3-month period. Does there seem to be much change? (There may be; pork prices go up and down because hogs are sold on an open market where demand and supply fluctuate.)
4. Pork is generally cheaper than beef. Why do you think this is so? (One reason is biology. A sow usually weans 7 to 8 piglets from each litter and she has 2 litters per year. That means as many as 16 new pigs per year. Also, it takes only about 6 months for hogs to reach market weight. A beef cow usually has only one calf every year, and it takes 16 to 20 months for that calf to grow to market size. On the other hand, the market weight of a beef steer is about 1,000 pounds while a hog weighs only about 220 when sent to market.)

Activity Title (3) **The Many Uses of Hogs**

Major Concepts Efficiency.

Goals To acquaint students with the many uses of hogs.

Activity Description

1. Give examples of what happens to the following parts of the hog:

hair	intestine	pancreas	meat
heart valves	pigskin	stomach	

2. Explain what is meant by the saying "they use all of the hog but the squeal."
3. Have students go to several stores (food stores and other places) and make a list of all the pork products they can find.
4. In class, have the students indicate which part of the hog the product came from.
5. Do there seem to be any parts of the hog that aren't used?

Activity Title (4) **Scientific Advancements in Corn and Hog Farming**

Major Concepts Impact of Technology; Scientific Advancement.

Goals To help students understand the impact of scientific research on farm production.

Activity Description

There have been many scientific advancements in growing corn and raising hogs that have made possible better hogs, increased corn yields per acre, and better conservation of the soil.

Divide the class into three groups and ask each group to read the appropriate section of *Corn and Hog Farming* and fill in one of the sections of the chart below. (A few possible answers appear below.)

Scientific Advancements and New Ways of Doing Things that have made possible . . .

Better, healthier hogs	Increased corn yields per acre	Better soil conservation
• antibiotics and vitamins for newborn pigs	• new plowing methods; hybrid corn	• contour plowing
• selective breeding	• combinations of new herbicides and insecticides	
	• applications of anhydrous ammonia	

Put the three headings for the chart on the board and fill in the chart with the class. Then ask the class to summarize the scientific advancements and improvements they have brought about for each of the three categories.

Some discussion questions: What kinds of jobs do the people have who have made these scientific advancements? Where are some places they might work? How do you think farmers find out about the new ways of doing things so they can use them?

Group Discussion: Research to get better animals, and higher yields, and to preserve the land is a continuous process. Pretend that you are the scientific director of a program to improve hogs, increase corn yields, and improve soil conservation. What kind of new research programs would you fund? If you had a limited amount of money which of these programs would you fund first, and why?

Raising Beef Cattle

The Ritschard family of Colorado raises beef cattle along the banks of the Colorado River. They keep about 400 cows on about 8,350 acres, including 7,000 acres that they lease from the Government for grazing their cattle. The Ritschards are cow-calf operators. They keep a herd of cows year after year. Those cows bear calves every year and most of this "crop" of animals is sold regularly. The calves are born in the spring and are usually kept 6 to 8 months. Then they may be sent to a feedlot owned by someone else to be fed until they are the right weight for butchering (about 1100 pounds), or they may be sold anytime after weaning. What the Ritschards decide to do depends on the cost of the feed, the amount of hay they have, and the price they are likely to get for the calves. Because the Ritschards' ranch is in a dry mountainous area, they don't raise grain to feed the cattle. The cattle roam over large areas of land grazing on the grasses that grow naturally. It takes from 15–30 acres of rangeland in that area to provide enough grazing for a cow and her calf. The Ritschards use horses, and sometimes pickup trucks, to herd the animals to new grazing areas around the large ranch.

The Ritschards brand their cattle, drive them up to high ground for summer grazing, and do countless other things that look just like what happens in a cowboy movie.

Cattle prices fluctuate, and some years the costs of raising the cattle are more than the Ritschards get at the market. To supplement their income, they rent out cabins to fishing enthusiasts along the banks of the river.

The Schuttes of Missouri are also cow-calf operators. They keep 50 high-grade beef cows on 280 acres. This is a much smaller farm with much less land per cow than the Ritschards use. That's because there is more rain and more grass in Missouri. One acre of the Schutte grazing land can provide enough grazing for a cow and her calf. But the land is also good for growing other things, and the Schuttes have diversified. On an additional rented 320 acres they grow soybeans and corn to sell, or they feed the corn to their livestock. They also raise hogs if the market price for corn is too low.

Activity Title (1) **Headlines—How Changes in Supply and Demand Affect Price**

Major Concepts Supply and Demand; Price Mechanism; Change.

Goals To help students understand the effects of supply and demand upon the price of beef at the store.

Activity Description Using the blackboard, or a set of transparencies, display a series of fictional newspaper headlines. As each headline is shown, ask the students to tell how this event might influence the price of beef, and give reasons to support their answers. Sample headlines might include:

"PORK AND POULTRY PRICES FALL"
(Lower price: Demand for beef would decline as beef became more expensive in relation to the new lower prices of pork and poultry.)

"HEAVY SNOW AND COLD HIT THE MIDWEST"
(Higher price: Cattle will gain weight more slowly in the cold; snow drifts prevent farmers from getting cattle to market, thus reducing the supply of beef.)

"REAL CONSUMER INCOME FALLS SAYS COMMERCE DEPARTMENT"
(Lower price: People will eat less meat, which results in a lower demand for beef.)

"OPEC CONFERENCE VOTES 10 PERCENT OIL PRICE INCREASE"
(Higher price: Costs of operating farms increase; some farmers will choose not to raise cattle, thus reducing supply.)

"GRAIN AND SOYBEAN PRICES RISE"
(Higher price: The higher cost of cattle will contribute to lowering the supply of beef.)

"GOVERNMENT CLOSES ONE MILLION ACRES OF RANGELAND TO CATTLE IN THE WEST
(Lower prices followed by higher prices: When the amount of grazing land is reduced, farmers will have to cut back their herds. More beef will come to the market causing prices to drop. Once this short-term oversupply is absorbed and beef supplies fall back, prices will go higher.)

You may also want to ask students to invent headlines of their own and evaluate their impact.

Activity Title (2) **Factors of Production**

Major Concepts Factors of Production.

Goals To help students to identify the production factors involved in raising beef cattle.

Activity Description Ask students to read *Raising Beef Cattle* and make a list of everything needed to produce beef cattle. Put the following headings on the board. (Here are a few suggestions of possible answers.)

Human Resources (labor)	Natural Resources (land)	Capital Resources
hired hands	land	machinery
Mr. and Mrs. Ritschard	water	fertilizer
	climate	gasoline

Working with the students, put the items on their lists in the proper categories. Out of this discussion develop definitions for the three factors of production listed above.

Another question: Which factors of production are increasing in cost? How might this affect the way beef cattle are raised?

Activity Title (3) **How Geography Affects the Methods of Raising Beef Cattle**

Major Concepts Land Use; Regional Specialization.

Goals To help students understand the diversity of methods used for raising beef cattle, and to understand how geographical factors affect production methods.

Activity Description Copy or read to students the summary above. Ask them also to read the top of the inside cover of the book. Beef cattle are raised in many different ways in different parts of the country, depending upon water availability, quality of land, and the cost and availability of feed grains.

Lead a discussion using the following questions:

1. How many acres were needed for the Ritschards to carry a cow-calf unit?
2. How many acres were needed for the Schuttes to carry a cow-calf unit?
3. How are cattle raised in other areas? What factors explain the differences in land needed and methods used in different parts of the United States?
4. What are the major farm commodities produced in your region of the country? Are these commodities produced in other sections of the country? Is it done in the same manner, or is it different? Why and how? Some of the class may want to get help answering this question by interviewing a local farmer, farm organization representative, or county extension agent.

Activity Title (4) **Decisionmaking**

Major Concepts Decisionmaking; Markets; Supply and Demand; Price Mechanism.

Goals To help students understand the farmer's constant need to make decisions.

Activity Description

1. Students should read the sections in *Raising Beef Cattle* on the Ritschard family.

2. Students should write a month-by-month diary, listing and briefly describing major activities on the ranch. This diary should emphasize the decisions the Ritschards have to make. For example, they should mention the decisions on when to sell cattle, when to move grazing cattle to a different pasture, which bulls to buy for breeding.

3. The students should make a chart as illustrated below. They should choose five decisions the Ritschards made, briefly summarize the factors that influenced their decision, and briefly explain why the decision was made the way it was.

Decisions	Summary of decision	Factors affecting decision	Why decision was made the way it was
1.			
2.			
3.			
4.			
5.			

Growing Oranges

There were twice as many oranges produced in the United States in 1976 as there were in 1960. The citrus industry has been growing rapidly since the end of World War II when concentrated juice came along. Concentrate revolutionized the industry. Scientists had finally discovered a way to dehydrate orange juice so that it could be reconstituted with full flavor. Since frozen concentrated juice was introduced in 1945/46, orange production in Florida (where most of our oranges are grown) has more than tripled. Acreage devoted to growing oranges has more than doubled.

Many Florida orange groves are part of cooperatives. The Haines City Citrus Growers Association managed by Art Mathias is a good example. The Haines City cooperative is made up of 450 groves, averaging 34 acres in size, and scattered throughout a 25-mile radius of Haines City in central Florida s prime citrus area. The groves are individually owned, usually by investors who live elsewhere. These owners have created a cooperative that raises and markets the oranges for them. Mathias' cooperative manages 8,500 acres of groves and has 700 workers (200 full-time). It owns buildings and the expensive modern equip-

ment necessary for orange growing. Mathias, in partnership with others, owns 65 acres of the groves in the cooperative. Every month he and other owners receive a statement explaining how much money was spent on his or her grove, the quantity of chemicals applied, and the amount of labor put into the grove. The cooperative's sales department is busy on the phone all through the harvesting season for fresh oranges (September–July), selling the oranges mostly to supermarket chains. Sales are credited to each owner's account.

As Cecil Hull, another grove owner-manager says, "We've developed more elaborate and more complete caretaking units than those in any other kind of agriculture. A Florida grove owner doesn't have to have any machinery. He doesn't really have to know where his grove is. He just invests and hopes everyone will treat him well."

There are some growers who manage their own groves. Tom Sasser manages his own 160-acre grove, which he owns in partnership with his brother-in-law. He doesn't belong to a cooperative. He takes care of the grove and owns the equipment himself. To sell oranges, he uses what the citrus industry calls a participation plan. This is an agreement which the grower makes with a processing company before the season begins. The grower promises to market his or her fruit through that company, which usually does the actual harvesting.

No matter how the oranges are produced and marketed, the physical requirements for producing oranges are the same. Oranges require a warm climate and a low likelihood of a freeze. Freezing temperatures break down the walls between the little pockets of juice in the orange, and the orange dries out. Oranges also require the proper balance of nutrients. Groves are fertilized two or three times a year. Matter of fact, as Mathias says, "Growing citrus is very nearly hydroponics. Our soils just hold up the trees. We add about everything else that the tree needs." (Hydroponics is the growing of plants in nutrient solutions.) The trees and oranges are also very susceptible to all kinds of insects and diseases. The groves are sprayed as often as three or four times a year, and spraying is expensive. It has been estimated that the cost of spraying in central Florida is nearly half the cost of production in the groves. Water is also important to citrus growth. Florida has a good pattern of rainfall, but still about half the groves are irrigated. In California, where the main groves are in the dry San Joaquin Valley, all oranges must be irrigated.

Activity Title (1) **Risk in Farming**

Major Concepts Risk; Investment.

Goals To help students understand the inherent risks in farming, and the things the farmer does to minimize those risks.

Activity Description Some questions for class discussion—"Farmers are some of the biggest gamblers around," was the comment made by Tom Sasser. Do you agree or disagree? What are some of the things farmers gamble on when they produce any crop? What do orange growers gamble on? (For example: weather, water, consumer demand, insect infestation, and disease.) How can orange growers minimize their risk? (For example: joining a cooperative, spraying for insects, investing in fans for frost protection, irrigation.)

The American farmer today needs to be trained in many different subjects in order to be successful. What are three of the subjects Tom Sasser needs to

understand to be successful?

When Tom Sasser bought his land for $310 per acre, it was raw land with pines and palmettos growing on it. In 1962 he began to plant 110 acres of land into orange groves. Now, with producing groves on it, Tom says he could sell the land for $4,000 per acre. If he sold the groves, what amount of money would he get before taxes? But Tom Sasser says he doesn't want to sell. Why do you think he feels this way? What would you do?

Activity Title (2) **Where Citrus Fruits Are Grown**

Major Concepts Regional Specialization; Graphing Skills.

Goals To help students visualize and understand the regional specialization involved in growing oranges.

Activity Description

1. Making and translating graphs.

Using the pie graphs on page 14 of *Growing Oranges,* have the students translate the citrus production information into bar graph form for each of the citrus products. After they have developed the five bar graphs (lemons, oranges, grapefruit, temples and tangelos, tangerines) independently, divide the class into small groups and ask each group to develop a graph which they feel best shows a composite of the citrus industry. They can find the numbers to be used as information for the graph by filling in this chart. Provide each group with paper, magic markers, rulers, etc., and ask the students to come up with the most descriptive and visually pleasing graph they can. When the graphs are finished, display them and ask the class to vote for the one they think presents the information the most effectively.

	Lemons (tons)	Oranges (tons)	Grapefruit (tons)	Tangelos (tons)	Tangerines (tons)	Total (tons)
Arizona						
California						
Florida						
Texas						
Total						

2. Some questions about regional specialization:

(a) Why does citrus production occur in these States rather than in other States?

(b) Would it be possible for Illinois to grow citrus crops? Explain why or why not.

(c) Why does Illinois grow farm products like soybeans and corn rather than citrus fruits?

(d) If your State doesn't produce citrus, how does it happen that citrus fruit is in the market every day?

Activity Title (3) **An Orange Juice Preference Test**

Major Concepts Comparison Shopping; Consumer Decisionmaking.

Goals To provide an opportunity for students to go into the marketplace themselves and gain experience making comparative shopping judgements.

Activity Description Divide the class into small groups equal to the number of stores to be surveyed. Give each group a chart on which to collect price information about orange juice in frozen, chilled, and canned form. Have each group visit their assigned store to gather the needed information. They should price a name brand, the house brand, and a generic brand, if possible. Ask them to calculate the price in terms of cost per 6-ounce serving. Discuss with class the arithmetic for obtaining this information.

Store:_____

	Frozen	Chilled	Canned
Brand			
House			
Generic			

average price per 6-oz. serving

When all the information has been collected, compare the prices found by the students. From fresh oranges, make orange juice in class and calculate its 6-ounce serving price. Compare with others.

Now, prepare and chill orange juice from two frozen brands, a chilled juice, canned brand, and fresh juice. Have students taste each type without knowing its source. When they finish, have them rate the juices and compare their results.

How does taste relate to price? Which form of orange juice is most economical to use? What form is most popular in store sales?

Black Families

There were nearly 1 million black farmers in 1920, probably more than half of them tenant farmers. Today there are only about 45,000 black farmers, but 9 out of 10 own part or all of the farm they operate. Half the blacks left the farm from 1940 to 1960 when cotton farming was revolutionized by machines and chemicals. In 1974, 1 farmer in 50 was black. Nearly two-thirds of them sold less than $2,500 worth of farm goods a year. Many worked in town to supplement their income, as do many white farm families.

This booklet describes visits to some black farmers with higher than average incomes.

Wilbur Minisee of Michigan raises corn, hay, and soybeans on 600 acres. He started with nothing. He has farmed about the only way open to a young person, black or white, who owns no land and does not have substantial money to invest. He rents all his land, buys used equipment, and borrows money. He learned farming from practical experience.

Wilbur Minisee had a bad season in 1977. Heavy rains and snow cost him most of his corn and soybean crops. But 1978 was better. His eventual goal is to

assemble 2,000 acres to work. He will continue to rent some of the land but hopes to own more, too.

John and Henry Sims, two brothers in a farming partnership in Arkansas, own about 30 acres around their homes and rent all the rest: 465 acres from their father, Joseph, and another 385 from neighbors. They grow cotton and soybeans just west of the Mississippi River. In 1978, their farm brought them $138,002 in total income and a net income of 48,478 to be divided between the two families. They have bought equipment worth a quarter of a million dollars, and not long ago built new homes for themselves.

The Sims' success is based on the ability to manage production on the land their father bought piece by piece over the years and other good land. They work hard and keep careful track of costs in relationship to output. For example, as John Sims explains, "You can buy a lot more chemicals than you really need. If that last pound of fertilizer you put down doesn't produce more cash from increased production than that pound cost, then you have to question putting that last pound down."

Activity Title (1) **Leaving the Farm**

Major Concepts Impact of Technology; Migration.

Goals To help students understand the economic reasons for the decline in the number of black farmers.

Activity Description The "People on the Farm" book *Black Families* addresses the economic issues relating to blacks leaving the farm during the period from 1930 to 1970, and discusses the successes and problems of several black farmers today.

Ask students to read page 8, "Why did blacks leave the farm?" Then use these questions to guide discussion.

1. Of the 926,000 black farmers in 1920 more than half were tenant farmers. Many of the tenant farmers were sharecroppers. What is a tenant farmer? What is a sharecropper?
2. What changes took place in agriculture in the South during the 1940's to the 1960's that caused many blacks to leave the farm?
3. What opportunities existed off the farm that pulled many blacks away?
4. What were the problems in the 1930-60 period facing a black—
a. sharecropper?
b. tenant farmer?
c. owner of a small farm?
5. Passing land down from one generation to the next is a problem for farm families, both black and white. What happens if a family has six children and only one wants the farm but doesn't have the money to purchase it?

Outside Research: Ask students to research and discuss the extent to which discrimination against blacks and the existence of a largely segregated society in the South contributed to blacks leaving the farm. (Look particularly at problems of obtaining education and information, problems in getting credit, problems in keeping or proving ownership of land.)

Activity Title (2) **Changing Work and Lifestyle**

Major Concepts Career Decisionmaking; Economic Motivations.

Goals To help students understand the economic motivations that caused black farmers to leave the farm; to help students apply the concept of economic motivation to their own lives, and to understand that personal values will affect economic decisions.

Activity Description Ask students to read about black farmers, listing reasons for the number dropping from 925,703 in 1920 to a level of 45,594 in 1974. (Mechanization, chemical weed killers, good factory wages, competition from western cotton, etc.)

1. Students can interview parents, relatives, and friends concerning reasons for their changing jobs in the past. Students should sort out economic from non-economic motivations gathered from the survey.
2. Students might research local or State employment situations which have forced workers to change jobs in the past, looking for references to the motivations expressed by those who voluntarily or involuntarily had to change jobs. What are the motivations for wanting to keep or wanting to change occupations?
3. Students might write down an occupation they are interested in and list three economic motivations for their interest. Then write a paragraph describing why they might or might not keep that occupational goal even if economic incentives were reduced considerably.
4. Students could list examples of the many problems which beset Wilbur Minisee that might have made a less dedicated farmer leave agriculture. As a contrast they could list the things which apparently keep Wilbur Minisee and the Sims brothers on the farm.
5. Identify several values held by Wilbur Minisee or the Sims brothers that would keep them in farming even though they might earn more money working in a factory.

Activity Title (3) **Chances of Success**

Major Concepts Risk; Investment Decisionmaking.

Goals To help students understand the problems facing people entering farming without large amounts of money to invest.

Activity Description
1. Have students read the section on the Minisees of Michigan, then:
a. List the details of the growth of Wilbur Minisee's farm.
b. List the difficulties faced by the Minisees.
c. List the ways Minisee diversifies on his farm.
2. Discuss in class these three topics focusing on the problems of a single individual going into farming today.
3. Do you think Wilbur Minisee will be able to make it as a farmer? Why or why not?

Section 3 Getting More Information about Agriculture

Local Resources

The best way to make agriculture real to your students is to spend some time looking at agriculture in your area. Even if you live in the heart of a big city, there is almost certainly some kind of farming taking place within a 50-mile radius of where you live. And no matter where you live, you can find people and businesses involved in the sale, transportation, distribution, or processing of food. If you are anywhere near an agricultural area, there will also be businesses based on supplying farmers with everything from seeds, tractors, and fertilizer to bank credit, building supplies, and insurance.

Here are some places to find out about your local agriculture picture:

Cooperative Extension. The Cooperative Extension Service is a U.S. Department of Agriculture agency that oversees cooperative arrangements between the U.S. Department of Agriculture and the State land-grant universities. There are agricultural extension agents in every State and in nearly 3,000 counties.

The extension agents advise farmers about new developments in agriculture and help them with their problems. The agents can also be a source of information for you and should be able to give you a good overview about agriculture in your area, as well as lead you to farmers and farm groups that might be able to work with or visit your class.

The County Extension Office may also have a person who coordinates 4-H youth activities. This 4-H coordinator should be able to help you get together with area young people with agricultural backgrounds. The address and phone number for your Cooperative Extension Office is probably listed in the white pages of the phone book under the County Government listings.

State Departments of Agriculture. Each State has a State Department of Agriculture which administers regulatory and service programs of the State relating to agriculture. They are usually sources of technical information about agriculture in the State. The address is usually listed under the State Government listings in the white pages of the telephone book.

Farm Groups. In agricultural areas there are frequently organizations of farmers whose purpose is to support and encourage agriculture. Your Cooperative Extension agent may be able to lead you to these local groups. Some of these groups are part of large national organizations of farmers. Some of the major national groups with addresses of their national headquarters are:

American Farm Bureau Federation
225 Touhy Ave.
Park Ridge, Illinois 60068

National Farmer Organization
Corning, Iowa 50841

National Farmer's Union
P.O. Box 39251
Denver, Colorado 80239

National Grange
1616 H St., N.W.
Washington, D.C. 20006

American Agriculture Movement
100 Maryland Ave., N.W., Suite 500-A
Washington, D.C. 20002

Business and Industries Related to Agriculture. There may be farm equipment manufacturers or dealers, food processors or wholesalers, businesses involved in the transportation of food, and many other agricultural-related businesses in your area. There certainly will be supermarkets and other retail food sales outlets. You can get some leads to these businesses by looking through the Yellow Pages under "Farm Equipment," "Food Wholesale and Retail," and related headings. Your local Chamber of Commerce or Better Business Bureau may also be helpful.

Vocational Agriculture Department of Your School. If your school or a neighboring school has a vocational agriculture department, the teachers and students in that department can be a good source of information. If there is a local chapter of Future Farmers of America in your area, they may be able to help you with a classroom presentation.

The Agriculture Colleges of State Land Grant Universities. These colleges teach students at the undergraduate and graduate levels, conduct research relating to agriculture using both State and Federal funds, and supervise extension activ-

ities. Many of the professors are leading experts in their fields. Personnel from these departments can be sources of information about the State agriculture picture.

Agricultural Editors and Writers. One good source of information about the local agricultural scene would be the agriculture or farm editor of your local paper. For a list of newspaper farm editors across the country write to:

Newspaper Farm Editors of America
4200 12th St.
Des Moines, Iowa 50313

There are many farm magazines aimed at farmers and those in related industries. For a list of magazine editors nationwide write to:

American Agricultural Editors Association
5520-G Touhy Ave.
Skokie, Illinois 60077

Information about the Commodities covered in the "People on the Farm" Series

There are many different kinds of farm products grown in this country. The ones featured in the "People on the Farm" books represent only a few of them. The farmers who grow these products and the businesses that market them want to encourage the sales of their products and want to be sure that the interests of their products are represented before the general public and government bodies whose regulations or legislation may affect them. In many cases, these farmers and marketers have gotten together to form associations. These groups usually have information and educational materials available for teachers. Below are some of the major associations for the commodities covered in the "People on the Farm" series.

Broilers
National Broiler Council
1155 15th St.
Washington, D.C. 20005

Dairying
National Dairy Council
6300 River Road
Rosemont, Illinois 60018

Hogs
National Pork Producers Council
1776 N.W. 114th St.
Des Moines, Iowa 50306

Beef Cattle
National Cattlemen's Association
P.O. Box 569
1001 Lincoln St.
Denver, Colorado 82003

Corn
National Corn Growers Association
RR Box 7
Shabbona, Illinois 60550

Oranges
Florida Department of Citrus
P.O. Box 148
Lakeland, Florida 33802

Florida Citrus Mutual
Citrus Mutual Bldg.
P.O. Box 89
Lakeland, Florida 33802

Information from the United States Department of Agriculture (USDA)

The Department of Agriculture produces many publications and audiovisual materials for farmers and consumers, as well as for teachers. To obtain a list of publications available from USDA write to:

List of Available Publications (List 11)
Publications Distribution Center, Room 507A
USDA
Washington, D.C. 20250

For a list of available filmstrips and slide sets with a price list write to:

Photography Center
USDA
Washington, D.C. 20250

Publications of Special Interest to Junior and Senior High School Teachers

Except where otherwise noted, the following publications are available free from:

Room 535-A
Special Programs
Office of Governmental and Public Affairs
USDA
Washington, D.C. 20250

• **From the Earth to Your Table** (1 per teacher). An activity master book which helps to explain the "why's" of changing food costs. Lessons cover:

— Who produces your food?
— Who shares in the money you spend for food?
— Why do food costs change?
— How do production costs, processing, and retailing affect the costs of food?

From the Earth to Your Table also contains background information and discussion suggestions for teachers; 8 preprinted spirit duplicating masters each of which will make 200 copies for student use; and 2 transparencies.

• **Agriculture USA** (5 per teacher). A 16-page booklet giving key facts and figures about American farmers as producers, consumers, employers, and environmentalists. Gives students a quick look at the highlights of American agriculture.

• **The Secret of Affluence** (5 per teacher). A 24-page booklet which describes how the Nation's wealth grew out of an efficient agriculture, and shows how 5 acres of farm land are needed to support each one of us.

• **Is the World Facing Starvation?** (5 per teacher). Questions and answers about the world food supply and what this country is doing to insure that we will have enough food for our needs, for sales abroad, and for food aid to developing nations.

• **What Farm Exports Mean to You** (5 per teacher). Explains about the export of American farm products, and what exports mean to the national economy, to the individual consumer, and to farmers.

• **Quick Quizzes** (5 of each title per teacher). A series of quizzes with answers and interesting information about a number of food-related topics. Can be used by students in group or individual learning situations.

Titles Offered:

Food for Overseas
Facts About Farm Crops
Facts About Farm Animals
Your Best Environment
Facts About World Hunger
Business of Farming

• **The Face of Rural America** 1976 Yearbook of Agriculture ($7.50 per copy). A beautiful 200-plus page hardcover book of pictures and text that describe modern farming and agricultural life today. The book, done as a Bicentennial project by United States Department of Agriculture, was designed to be a visual record of American agriculture.

• **What's to Eat? And Other Questions Kids Ask about Food** 1979 Yearbook of Agriculture ($4.50 per copy). For upper elementary and junior high. A full-color book all about food for young people: the history of agriculture, food production today, smart shopping, nutrition, food around the world, problems of world hunger, food and farming in the future, and gardening for young people plus crafts and games and recipes.

Both Yearbooks may be purchased from the:

Superintendent of Documents
U.S. Government Frinting Office
Washington, D.C. 20402

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